

SEQUENCE LISTING

<110> Brookhaven Science Associates
 Shanklin, John

<120> Mutant Fatty Acid Desaturase and Methods for Directed Mutagenesis

<130> CIP of 09/328,550 filed June 9, 1999; which was a CIP of 09/233,856
 filed January 19, 1999

<150> 09/328,550
 <151> 1999-06-09

<160> 13

<170> PatentIn version 3.1

<210> 1
 <211> 363
 <212> PRT
 <213> Ricinus communis

<220>
 <221> misc_feature
 <223> ricinus communis delta 9 18:0 Acyl ACP Desaturase

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Pro Phe Met Pro Pro Arg Glu Val His Val Gln Val Thr His Ser Met
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Pro Pro Gln Lys Ile Glu Ile Phe Lys Ser Leu Asp Asn Trp Ala Glu
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Glu Asn Ile Leu Val His Leu Lys Pro Val Glu Lys Cys Trp Gln Pro
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Gln Asp Phe Leu Pro Asp Pro Ala Ser Asp Gly Phe Asp Glu Gln Val
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Arg Glu Leu Arg Glu Arg Ala Lys Glu Ile Pro Asp Asp Tyr Phe Val
 85 90 95

Val Leu Val Gly Asp Met Ile Thr Glu Glu Ala Leu Pro Thr Tyr Gln
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Thr Met Leu Asn Thr Leu Asp Gly Val Arg Asp Glu Thr Gly Ala Ser
115 120 125

Pro Thr Ser Trp Ala Ile Trp Thr Arg Ala Trp Thr Ala Glu Glu Asn
130 135 140

Arg His Gly Asp Leu Leu Asn Lys Tyr Leu Tyr Leu Ser Gly Arg Val
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Asp Met Arg Gln Ile Glu Lys Thr Ile Gln Tyr Leu Ile Gly Ser Gly
165 170 175

Met Asp Pro Arg Thr Glu Asn Ser Pro Tyr Leu Gly Phe Ile Tyr Thr
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Ser Phe Gln Glu Arg Ala Thr Phe Ile Ser His Gly Asn Thr Ala Arg
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Gln Ala Lys Glu His Gly Asp Ile Lys Leu Ala Gln Ile Cys Gly Thr
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Ile Ala Ala Asp Glu Lys Arg His Glu Thr Ala Tyr Thr Lys Ile Val
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Glu Lys Leu Phe Glu Ile Asp Pro Asp Gly Thr Val Leu Ala Phe Ala
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Asp Met Met Arg Lys Lys Ile Ser Met Pro Ala His Leu Met Tyr Asp
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Gly Arg Asp Asp Asn Leu Phe Asp His Phe Ser Ala Val Ala Gln Arg
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Leu Gly Val Tyr Thr Ala Lys Asp Tyr Ala Asp Ile Leu Glu Phe Leu
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Val Gly Arg Trp Lys Val Asp Lys Leu Thr Gly Leu Ser Ala Glu Gly
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Gln Lys Ala Gln Asp Tyr Val Cys Arg Leu Pro Pro Arg Ile Arg Arg
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Leu Glu Glu Arg Ala Gln Gly Arg Ala Lys Glu Ala Pro Thr Met Pro

115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335

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Phe Ser Trp Ile Phe Asp Arg Gln Val Lys Leu
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 <211> 1092
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 <220>
 <221> misc feature
 <223> residues 138 to 1239 of open reading frame

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 aaatccctag acaattgggc tgaggagaac attctggttc atctgaagcc agttgagaaa 180
 tgttggcaac cgcaggattt ttgcccagat cccgcctctg atggatttga tgagcaagtc 240
 agggaaactca gggagagagc aaaggagatt cctgatgatt attttgttgt ttgggttgga 300
 gacatgataa cggaagaagc ccttcccact tatcaaaca tgctgaatac cttggatgga 360
 gttcgggatg aaacaggtgc aagtcctact tcttgggcaa ttgggacaag ggcatggact 420
 gcggaagaga atagacatgg tgacctctc aataagtatc tctacctatc tggacgagtg 480
 gacatgaggc aaattgagaa gacaattcaa tatttgattg gttcaggaat ggatccacgg 540
 acagaaaaca gtccatacct tgggttcac tatacatcat tccaggaaag ggcaaccttc 600
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 gaaaaactct ttgagattga tctgatgga actgttttgg cttttgctga tatgatgaga 780
 aagaaaattt ctatgcctgc acacttgatg tatgatggcc gagatgataa tctttttgac 840
 cacttttcag ctgttgcgca gcgtcttggg gtctacacag caaaggatta tgcagatata 900
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 caaaaggctc aggactatgt ttgtcgggta cctccaagaa ttagaaggct ggaagagaga 1020
 gctcaaggaa gggcaaagga agcaccacc atgcctttca gctggatttt cgataggcaa 1080
 gtgaagctgt ag 1092

gagcctctaccc tcaagtctgg ttctaaggaa gttgagaatc tcaagaagcc tttcatgcct 60
 cctcgggagg tacatgttca ggttacccat tctatgccac cccaaaagat tgagatcttt 120
 aaatccctag acaattgggc tgaggagaac attctggttc atctgaagcc agttgagaaa 180
 tgttggcaac cgcaggattt ttgcccagat cccgcctctg atggatttga tgagcaagtc 240
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 gacatgataa cggaagaagc ccttcccact tatcaaaca tgctgaatac cttggatgga 360
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 aagaaaattt ctatgcctgc acacttgatg tatgatggcc gagatgataa tctttttgac 840
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 caaaaggctc aggactatgt ttgtcgggta cctccaagaa ttagaaggct ggaagagaga 1020
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<210> 3
 <211> 34
 <212> DNA
 <213> Artificial

<220>
 <221> misc_feature
 <223> PCR primer; sequence flanking unique XbaI site at the 5' end of the open reading frame

<400> 3
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<210> 4
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 <221> misc_feature
 <222> (56)..(57)
 <223> PCR primer is a degenerate oligonucleotide in which "n" indicates the presence of either C, A, T or G at that nucleotide position

<400> 4
 ccaaattgcc caagacgtcg gacttgcacc tgtttcatcc cgaactccat ccaamnatt 60
 cagcattggtt tg 72

<210> 5
 <211> 31
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 <213> Artificial

<220>
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<400> 5
 gaaacaggtg caagtccgac gtcttgggca a 31

<210> 6
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 <212> DNA
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gtttttctgtc cgcggatcca ttcctg

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<400> 7
gtgagcggat aacaatttca cacagtctag aaat

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<400> 8
cacgaggccc tttcgtcttc aagaattctc

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<400> 9
ttgataagtg ggaagggtt cttccgtt

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<210> 10
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<222> (41)..(43)
<223> PCR primer is a degenerate oligonucleotide in which "n" indicates the presence of either C, A, T or G and in which "k" indicates the presence of either T or G.

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 <222> (32)..(34)
 <223> PCR primer is degenerate oligonucleotide in which "n" indicates the presence of either C, A, T, or G at that nucleotide position and in which "k" indicates either T or G

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<400> 10
 aacggaagaa gcccttccca cttatcaaac annkctgaat nnknnkgatg gagttcggga 60
 tgaaac 66

<210> 11
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 <212> DNA
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<220>
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<400> 11
 tccattcctg aaccaatcaa atattg 26

<210> 12
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 <222> (22)..(24)
 <223> PCR primer in a degenerate oligonucleotide in which "n" indicates the presence of either C, A, T or G at that nucleotide position and in which "k" indicates the presence of either T or G at that nucleotide position.

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 <222> (28)..(30)
 <223> PCR primer in a degenerate oligonucleotide in which "n" indicates the presence of either C, A, T or G at that nucleotide position

and in which "k" indicates the presence of either T or G at that nucleotide position.

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 <222> (49)..(51)
 <223> PCR primer in a degenerate oligonucleotide in which "n" indicates the presence of either C, A, T or G at that nucleotide position and in which "k" indicates the presence of either T or G at that nucleotide position.

<400> 12
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 acatcattcc 70

<210> 13
 <211> 30
 <212> DNA
 <213> Artificial

<220>
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 <223> PCR primer

<400> 13
 gcaaaagcca aaacggtacc atcaggatca 30

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